

## REVIEWS

**Andrews's Practical Course in Botany\***

The versatile author of interesting reminiscences of the Civil War period, several novels, numerous articles in newspapers, in popular and semi-popular magazines, horticultural society transactions, etc., and of "Botany all the year round"† has outdone her previous efforts in the attractive high-school text-book before us. Born and educated in Georgia, she has traveled widely in this country and abroad, and her books show less provincialism than do some other current texts. Most American botanical text-books have been written in or near the glaciated region, where the population is dense and wealth abundant and most high-schools well supplied with apparatus. Miss Andrews's books are well adapted for more thinly settled regions, but not for them alone by any means, for while the last one was in preparation, she visited (among others) several schools in New York City to find out just what sort of a botanical text-book was needed there. Much of the material for the new book was gathered in person at such botanical centers as Washington, St. Louis, and Auburn, Ala. At the latter place she received considerable assistance from Prof. Francis E. Lloyd, which is acknowledged on the title-page and elsewhere. Some of the half-tone illustrations were obtained from the Missouri Botanical Garden, the U. S. Department of Agriculture, and other sources, and some are from her own photographs.

The new book differs from its predecessor in having about 25 per cent. more pages, many more half-tone illustrations (15 of them covering a full page each, and called plates), and fewer line-drawings, and in a somewhat different arrangement of subject-matter. The main chapters are headed (1) The seed, (2) Germination and growth, (3) The root, (4) The stem, (5) Buds and branches, (6) The leaf, (7) The flower, (8) Fruits, (9) The response of the plant to its surroundings, and (10) Cryptogams.

\* A practical course in botany, with especial reference to its bearings on agriculture, economics and sanitation. By E. F[rances] Andrews. .x + 374 pp., including 526 text-figures. New York (American Book Co.), Dec. 1911. \$1.25.

† 302 pp. 543 figs. New York (American Book Co.), 1903. Reviewed by C. R. B[arnes] in *Bot. Gaz.* 35: 439. June, 1903.

Chapter 4 contains three pages on forestry, and Chapter 7 several pages on Mendelism and plant breeding and fourteen pages on the ecology of the flower. Chapter 9, devoted especially to ecology, is about twice as long as the corresponding one in "Botany all the year round," and contains several pages on zonation and other phytogeographical problems, which were not included in the earlier book. Dissemination is treated in Chapter 1. Chapter 10 closes with four pages on evolution, and systematic botany is treated very briefly in an appendix, about the same as in the other book.

The practical questions and suggestions for field work, which were such a valuable feature of the first book, are here repeated, with some changes and additions. They are very well chosen, and most of them require the student to do some thinking, instead of merely turning back a few pages to find the answers. The literary style is simple without being tedious, and there are only enough technicalities to obviate undue circumlocution.

This book, like many other modern botanical texts, illustrates strikingly the recent decline in popularity of systematic botany. A generation ago most American "botanies" consisted chiefly of rather dry definitions of a multitude of forms of plant organs, after mastering which the student was able to use keys for the identification of species. Directions for the preparation of herbarium specimens were often added, and the more advanced books discussed the principles of classification and nomenclature. Nowadays histology, physiology, ecology, genetics, etc., have almost crowded taxonomy out of the curriculum. Some of the latest and most pretentious botanical text-books indeed describe the morphological features of many of the larger plant families and speculate on their phylogeny, but give no idea of what constitutes a species or how plants are named, and offer the student no instructions as to how to identify an unfamiliar plant if he should perchance wander far enough afield to meet one.

As Prof. Bessey has recently pointed out,\* the modern sort of botany gives a student nothing to occupy his mind with during

\* Science II. 33: 635. April 28, 1911. Mr. Seaver's article in *TORREYA* for November, 1912, should also be read in this connection.

vacation, unless he goes to a laboratory or provides himself with expensive apparatus. The suggestions for field work in Miss Andrews's book, however, are well adapted for giving an ambitious student something to do outside of the laboratory and school-room.

An abridged flora of the Eastern United States, covering 368 pages, by another author, is bound in with some copies of this new book, as with its predecessor, for the benefit of those who may desire to increase their acquaintance with the vegetable kingdom by outdoor work.

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#### **Heredity and Eugenics\***

Under this title there has appeared in book form a series of popular lectures which were delivered at the University of Chicago during the summer of 1911. The table of contents which is here printed gives an adequate and concise statement of the scope of these lectures.

I. Recent Developments in Heredity and Evolution: General Introduction.

II. The Physical Basis of Heredity and Evolution from the Cytological Standpoint. John Merle Coulter, Professor and Head of the Department of Botany, the University of Chicago.

III. The Method of Evolution.

IV. Heredity and Sex. William Ernest Castle, Professor of Zoology, Harvard University.

V. Inheritance in the Higher Plants.

VI. The Application of Biological Principles to Plant Breeding. Edward Murray East, Assistant Professor of Experimental Plant Morphology, Harvard University.

VII. Recent Advances and the Present State of Knowledge concerning the Modification of the Germinal Constitution of Organisms by Experimental Processes. William Lawrence Tower, Associate Professor of Zoology, the University of Chicago.

VIII. The Inheritance of Physical and Mental Traits of Man and Their Application to Eugenics.

\* Pages i-vii + 1-315. [Illust.] The University of Chicago Press, Chicago, Illinois, 1912. Agents, The Baker and Taylor Company, New York. Price \$2.50.